REMARKS

The application has been amended and is believed to be in condition for allowance.

Previous claims 9 and 10 have been canceled. Independent claims 2 and 11 are being amended and new independent claims 13-22 is newly presented.

The Official Action objected to the abstract, noting that the abstract was in excess of 150 words. Responsively, the abstract has been amended to be in compliance with U.S. practice.

Claims 2-3 and 9-12 stand rejected as obvious over UCHIDA et al. 5,798,867 in view of JP 61-121,379.

The presently pending claims are believed to patentably recite the present invention.

The claims include recitations directed to the inventive features of the laser beam intensity correction of the plurality of laser beam being performed by combination of a beam splitter (9a, 9b) and a rotated optical substrate (10b), in which the beam splitter splits an input laser beam into a plurality of split laser beams in a plurality of optical path; and the optical substrate controls the intensity of the split laser beams by being rotated around an optical axis of the split laser beam as a rotation axis while maintaining an incident angle of the split laser beam thereto.

In the present invention, even when a laser beam source emitting a random or no polarizing laser beam is applied, it is possible to control intensity of the split laser beams. More specifically, the beam splitter of the invention converts an input random or non-polarized laser beam into a partial polarized laser beam due to a reflectance ratio characteristic dependent on polarization. Thus, the intensity control becomes possible by utilizing the optical substrate. See the disclosure in the specification on, at least, page 20, lines 11-25.

The applied references both individually and in combination, failed to disclose or suggest either the inventive recited method or the inventive recited apparatus.

The cited JP 61-121,379 discloses a laser output varying device, in which a polarized laser beam is applied for varying laser beam output. Therefore, when a random or no polarized laser beam is applied to the device of JP 61-121,379, laser beam intensity control cannot be realized.

UCHIDA et al. discloses a beam splitting apparatus, in which a plurality of partial reflection and transmission mirrors (14a-14d) are provided for splitting an input laser beam. Therefore, the splitting principle of an input beam is different than that recited. More specifically, when a random or non-polarized laser beam is applied into the mirrors of the UCHIDA et al. device, a partial polarized beam is not delivered.

Accordingly, even if the disclosure of the JP 61-121,379 reference is combined with UCHIDA et al., the features of the present invention do not result.

Furthermore, as seen by the embodiment of application Figure 8, having the two beam splitters 9a and 9b and the two laser beam intensity correction mechanisms 10 disposed in the optical paths 1 and 3, corresponding to new claim 13, the split laser beam from the beam splitter 9b into the optical path 2 is used for a reference beam because the laser beam from the splitter 9a approaches becoming a non-polarized beam caused by the two beam splitters 9a and 9b. Thus, according to the embodiment illustrated by Figure 8, the output powers of the three split laser beams can be controlled to become equal while applying the two laser beam intensity correction mechanisms. The configuration of the embodiment shown in Figure 8 is reflected by the recitations of claim 13 and is believed to be both novel and non-obvious over the prior art.

In view of the above, Applicant believes that the present application is in condition for allowance and an early indication of the same is respectfully requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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REL/psf

APPENDIX:

The Appendix includes the following item(s):

- a new or amended Abstract of the Disclosure

ABSTRACT OF THE DISCLOSURE

~~A method of correcting laser beam intensity, a laser beam intensity correction mechanism and a multi-branched laser oscillation device having the correction mechanism to adjust the laser beam intensity easily and smoothly, are provided.~~

A laser beam oscillation device includes a laser oscillator [[7]], a reflection mirror [[8]], beam splitters [[9a and 9b]] and a reflection mirror [[9c]] leading the laser beam to optical paths [[1 to 3]], laser beam intensity correction mechanisms [[10]] correcting the laser beam intensity in each optical path, and optical systems [[11]]. Each of the laser beam intensity correction mechanisms [[10]] includes a rotating portion [[10d]] rotating around an optical axis of the laser beam by moving a lever in the case, and an optical substrate [[10b]] slantly fixed to a rotating portion ~~in a manner that an incident angle of the laser beam thereto is set at a Brewster's angle~~. The optical substrate [[10b]] is rotated around the optical axis while maintaining the Brewster's angle. Subsequently, polarizing operation adjusts transmission intensity of the laser beam such that the laser beam intensity in each optical path becomes equal to each other.

ABSTRACT OF THE DISCLOSURE

A laser beam oscillation device includes a laser oscillator, a reflection mirror, beam splitters and a reflection mirror leading the laser beam to optical paths, laser beam intensity correction mechanisms correcting the laser beam intensity in each optical path, and optical systems. Each of the laser beam intensity correction mechanisms includes a rotating portion rotating around an optical axis of the laser beam by moving a lever in the case, and an optical substrate slantly fixed to a rotating portion. The optical substrate is rotated around the optical axis while maintaining the Brewster's angle. Subsequently, polarizing operation adjusts transmission intensity of the laser beam such that the laser beam intensity in each optical path becomes equal to each other.